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600 13th Street, NW  
Washington, DC 20005-3096

EXAMINER
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RIVERA, JOSHEL

ART UNIT	PAPER NUMBER
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1746

NOTIFICATION DATE	DELIVERY MODE
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11/17/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/588,098		SLAFER, W. DENNIS	
	<b>Examiner</b>		<b>Art Unit</b>	
	JOSHEL RIVERA		1746	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 October 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____.                                     |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____.   | 6) <input type="checkbox"/> Other: _____.                         |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 – 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1 and 11 state that the elongated linear polymer layer has a thickness of about 4 microns to about 275 microns.

3. Page 12 paragraph 40 of the Specification reads that "the optical data storage tape 10 is characterized by a thin (in the approximate range of 4 microns to 1000 microns) elongated tape-like substrate..." while paragraph 41 states that the apparatus can be used with some modifications that include the use of an optical compensator to correct the optical beam path for the "missing" disc substrate (typically 0.6 mm thick polycarbonate for DVD's). There is no support in the Specification for an apparatus to operate with a substrate with a thickness between 4 microns to 275 microns.

Specifically, thickness of 275 microns is not explicitly disclosed in the specification therefore it is considered a new matter. Claims 2 – 10 and 12 – 20 are also rejected due to their dependency to claims 1 and 11. Applicant's arguments directed to

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“approximate” is viewed as unpersuasive, since 275 microns is not considered to be approximation for 100 microns.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4 – 7, 9, 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster (US Patent 4,836,874).

6. With respect to claim 1, Foster teaches of an apparatus for mass producing compact discs (Abstract), which includes an elongated linear polymer layer that has a thickness of about 5 mils (127  $\mu\text{m}$ ) (column 4 lines 11 – 14), the apparatus comprising a drum mounted for rotation about a rotation axis (Figure 1 item 12), with a surface with predetermined pattern (column 4 lines 1 – 7) and a helium-neon gas laser tube that emits a collimated laser beam of a predetermined wavelength and energy toward a cylindrical diverging lens operative for diverging the laser beam in the axial direction across the entire length of the roller (column 4 lines 38 – 44, Figure 1 item 36 the laser item 38 the lens).

7. Foster fails to explicitly disclose that the drum is seamless with a seamless surface.

8. It would have been obvious to one of ordinary skills in the art at the time of the invention to use a seamless drum in Foster's apparatus. The rationale being that, since the preformatted patterns that carry information which is subsequently read and processed by other devices are directly engraved on the drum (column 4 lines 1 – 10) the presence of seams would affect the pattern which would affect the information present in the patterns.

9. With regards to claims 2 and 4, the teachings of Foster are presented above. Additionally Foster teaches the use of a dispenser for dispensing a liquid between the outer surface of the drum and elongated linear polymer layer (Figure 1 item 46), the liquid being a polymeric material (column 4 lines 54 – 63) that is hardened by a focused laser beam in the orange-red spectrum (column 4 lines 64 – 68) and the material begins to fill the pits and creates projections whose shapes exactly match the shapes of the corresponding pits (column 5 lines 6 – 12).

10. With regards to claim 5, the teachings of Foster are presented above. Additionally Foster teaches using backing rollers pressing the elongated linear polymer layer against the drum (Figure 1 items 30 and 34).

11. With regards to claims 6 and 7, the teachings of Foster are presented above. Additionally Foster teaches vacuum-deposition of aluminum or analogous metal on top of the film (column 5 lines 49 – 51), which would inherently require a vacuum chamber containing deposition sources and being adapted to receive the embossed elongated linear polymer layer.

12. With regards to claim 9, the teachings of Foster are presented above.

Additionally Foster teaches the roller has recesses or pits (column 4 lines 1 – 7) which would be considered ridges and bosses.

13. With regards to claim 10, the teachings of Foster are presented above.

Additionally Foster states that the depths, sizes and relative spacing of the pits carry information which is subsequently read and processed by known circuitry of audio and/or video compact disc players (column 4 lines 7 – 10), where the information would intrinsically include header information, servo and error correction information, pre-recorded digital information and pre-recorded analog information.

14. With regards to claim 20, the teachings of Foster are presented above.

Additionally Foster teaches that the liquid dispenser dispenses a dye solution (column 4 lines 57 – 61).

15. Claims 3 and 11 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster (US Patent 4,836,874) in view of Norden (WO 97/14142) as evidenced by Rosen et al (US Patent 5,627,817).

16. With regards to claim 3, the teachings of Foster are presented above. Foster fails to explicitly disclose using a chemical to soften the surface of the polymer layer.

17. Norden teaches an embodiment where he uses a chemical to soften the polymer layer prior embossing and then using heat in order to remove the softening chemical after embossing (column 5 lines 25 – 31).

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18. It would have been obvious to one of ordinary skills in the art at the time of the invention to use a softening chemical on the surface of the polymer layer, as suggested by Norden, in Foster's apparatus. The rationale being that one of ordinary skills in the art would appreciate that in order to create an impression on a hard plastic surface would require large amount of force and energy, where using a chemical to soften the surface prior embossing saves money and time by reducing the amount of force required.

19. With regards to claim 11, Foster teaches of an apparatus capable of mass producing compact discs (Abstract), by embossing an elongated linear polymer layer that has a thickness of about 5 mils (127  $\mu\text{m}$ ) (column 4 lines 11 – 14), with a drum mounted for rotation about a rotation axis (Figure 1 item 12), with a surface with predetermined pattern (column 4 lines 1 – 7) and hardening the embossed surface prior to removing it from the drum by using a helium-neon gas laser tube that emits a collimated laser beam of a predetermined wavelength and energy toward a cylindrical diverging lens operative for diverging the laser beam in the axial direction across the entire length of the roller (column 4 lines 38 – 44, Figure 1 item 36 the laser item 38 the lens). Foster fails to explicitly disclose that the drum is seamless with a seamless surface, softening the surface prior to embossing it and winding the elongated linear polymer with the embossed surface into a roll.

20. It would have been obvious to one of ordinary skills in the art at the time of the invention to use a seamless drum in Foster's apparatus. The rationale being that, since the preformatted patterns that carry information which is subsequently read and

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processed by other devices are directly engraved on the drum (column 4 lines 1 – 10) the presence of seams would affect the pattern which would affect the information present in the patterns.

21. It would have been obvious to one of ordinary skills in the art at the time of the invention to wind the elongated linear polymer layer with the embossed surface into a roll. The rationale being that one of ordinary skills in the art at the time of the invention would appreciate that when working with long webs it would require winding the web into a roll after processing in order to store the finished product and to reduce space.

22. Norden teaches an embodiment where he uses a chemical to soften the polymer layer prior embossing and then using heat in order to remove the softening chemical after embossing (column 5 lines 25 – 31).

23. It would have been obvious to one of ordinary skills in the art at the time of the invention to use a softening chemical on the surface of the polymer layer, as suggested by Norden, in Foster's apparatus. The rationale being that one of ordinary skills in the art would appreciate that in order to create an impression on a hard plastic surface would require large amount of force and energy, where using a chemical to soften the surface prior embossing saves money and time by reducing the amount of force required.

24. With regards to claim 12, the teachings of Foster and Norden are presented above. Additionally Norden teaches an embodiment where he uses a chemical to soften the surface of the polymer layer prior embossment (column 5 lines 25 – 29).



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25. With regards to claim 13, the teachings of Foster and Norden are presented above. Additionally Foster teaches the use of a dispenser for dispensing a liquid between the outer surface of the drum and elongated linear polymer layer (Figure 1 item 46), the liquid being a polymeric material (column 4 lines 54 – 63) that is hardened by a focused laser beam in the orange-red spectrum (column 4 lines 64 – 68) and the material begins to fill the pits and creates projections whose shapes exactly match the shapes of the corresponding pits (column 5 lines 6 – 12).

26. With regards to claim 14, the teachings of Foster and Norden are presented above. Foster teaches vacuum-deposition of aluminum or analogous metal on top of the film (Foster: column 5 lines 49 – 51). Norden states that applying a metallic reflection layer, which is performed by Foster, to the embossed surface of the registration layer, where binary data are represented by localized level variations, where the reflection layer ensures that, when the registration side of the medium is scanned with a focused light beam, enough light intensity is reflected to yield an acceptable output signal level (column 6 lines 13 – 20, column 7 lines 19 – 20), which would intrinsically classify this layer as an optical recording layer.

27. With regards to claim 15, the teachings of Foster and Norden are presented above. Additionally Norden teaches that the reflection layer has localized level variations (column 7 lines 19 – 20), which can be achieved by endowing the registration layer with a pattern of pits or bumps what can be represent “0” and “1” (column 7 lines 31 – 34, column 8 lines 1 – 6).

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28. With regards to claim 16, the teachings of Foster and Norden are presented above. Additionally Norden teaches using a dielectric layer (column 7 lines 9 – 10), a reflection layer (column 7 lines 27 – 28) and the use of squarylium dye (column 7 lines 1 – 4) that, as stated by Rosen, its functionally equivalent to a phase change layer (column 1 lines 21 – 40). It would be obvious to one of ordinary skills in the art at the time of the invention to have used a dielectric layer, reflection layer and phase change layer, as suggested by Norden, in Foster's method. The rationale being that one of ordinary skills in the art would appreciate that by applying these layers the properties of the optical medium would be enhanced.

29. With regards to claim 17, the teachings of Foster and Norden are presented above. Additionally Foster teaches the roller has recesses or pits (Foster: column 4 lines 1 – 7) which would be considered lands and grooves and Norden teaches that the embossed forms are usually pits of constant width but variable length (Norden: column 4 lines 14 – 15, lines 18 – 23), which would intrinsically comprise of lands and grooves, and these marks are in an helical path (Norden: column 4 lines 18 – 23) which would be wobbled.

30. With regards to claim 18, the teachings of Foster and Norden are presented above. Foster states that the depths, sizes and relative spacing of the pits carry information which is subsequently read and processed by known circuitry of audio and/or video compact disc players (column 4 lines 7 – 10), where the information would intrinsically include header information, servo and error correction information, pre-recorded digital information and pre-recorded analog information.

31. With regards to claim 19, the teachings of Foster and Norden are presented above. Additionally Norden teaches that a registration layer is provided on the substrate and that the embossing is done under pressure (column 3 lines 21 – 24). Intrinsically if the embossing is done under pressure on the registration layer, the layer would be embedded into the polymer layer as the embossments are created.

32. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foster (US Patent 4,836,874) view of Takakuwa et al (US Patent 6,162,519).

33. With regards to claim 8, the teachings of Foster are presented above. Foster fails to explicitly disclose the use of an optical head array adapted to write recording marks in the optical recording layer over the pattern of optically readable embossments.

34. Takakuwa teaches a method to write recording marks using a laser cutting machine with pattern based on desired data (column 13 lines 12 – 14).

35. It would have been obvious to one of ordinary skills in the art at the time of the invention to use Takakuwa's laser cutting machine to write recording markings in Foster's apparatus. The rationale to do so would have been that by using a laser cutting machine a more precise and detailed pattern can be formed without affecting the prior embossed pattern by using another press or pressing a blade on the surface of the polymer.

***Response to Arguments***

36. Applicant's arguments filed October 27, 2010 have been fully considered but they are not persuasive.

37. Regarding the rejection of claims 1 – 20 under 35 USC 112 First Paragraph, Applicant argues that there is support in the Specification to reduce the range of 4 microns to 1000 microns to a range of 4 microns to 275 microns because the Specification states that the optical data storage tape is characterized by a thin substrate (in the approximate range of 4 microns to 1000 microns) and that one of ordinary skills in the art would appreciate (particularly by the use of the word approximate) that the Applicant intended to be able to claim at the time the application was filed any sub-range within the overall given range. Applicant also states that there is no requirement under 35 USC 112 First Paragraph to state why a narrower range is preferred over a broader range. The Examiner disagrees with Applicant's arguments.

38. Applicant's amendment of claim 1 submitted on April 12, 2010 excluded the use of substrates with thicknesses larger than 275 microns up to 1000 microns with the clear intention to overcome the prior art of the previous Office Action. Applicant has no support to exclude this range since the clear intention of the invention is to operate with substrates with thicknesses from 4 microns to 1000 microns, as clearly stated in the Specification and by Applicant's arguments. The only way to demonstrate that Applicant had support to exclude this range would have been if Applicant stated in the

Specification that the preferred range of operation is from 4 microns to 275 microns or have provided an example of operation at 275 microns.

39. The introduction of claim changes which involve narrowing the claims by introducing elements or limitations which are not supported by the as-filed disclosure is a violation of the written description requirement of 35 U.S.C. 112, first paragraph. See, e.g., *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1571, 39 USPQ2d 1895, 1905 (Fed. Cir. 1996) (a “laundry list” disclosure of every possible moiety does not constitute a written description of every species in a genus because it would not “reasonably lead” those skilled in the art to any particular species); *In re Ruschig*, 379 F.2d 990, 995, 154 USPQ 118, 123 (CCPA 1967) (“If n-propylamine had been used in making the compound instead of n-butylamine, the compound of claim 13 would have resulted. Appellants submit to us, as they did to the board, an imaginary specific example patterned on specific example 6 by which the above butyl compound is made so that we can see what a simple change would have resulted in a specific supporting disclosure being present in the present specification. The trouble is that there is no such disclosure, easy though it is to imagine it.”) (emphasis in original). In *Ex parte Ohshiro*, 14 USPQ2d 1750 (Bd. Pat. App. & Inter. 1989), the Board affirmed the rejection under 35 U.S.C. 112, first paragraph, of claims to an internal combustion engine which recited “at least one of said piston and said cylinder (head) having a recessed channel.” The Board held that the application which disclosed a cylinder head with a recessed channel and a piston without a recessed channel did not specifically disclose the “species” of a channeled piston. While these and other cases find that recitation of an undisclosed species may

violate the description requirement, a change involving subgeneric terminology may or may not be acceptable. Applicant was not entitled to the benefit of a parent filing date when the claim was directed to a subgenus (a specified range of molecular weight ratios) where the parent application contained a generic disclosure and a specific example that fell within the recited range because the court held that subgenus range was not described in the parent application. In *re Lukach*, 442 F.2d 967, 169 USPQ 795 (CCPA 1971). On the other hand, in *Ex parte Sorenson*, 3 USPQ2d 1462 (Bd. Pat. App. & Inter. 1987), the subgeneric language of “aliphatic carboxylic acid” and “aryl carboxylic acid” did not violate the written description requirement because species falling within each subgenus were disclosed as well as the generic carboxylic acid. See also *In re Smith*, 458 F.2d 1389, 1395, 173 USPQ 679, 683 (CCPA 1972) (“Whatever may be the viability of an inductive-deductive approach to arriving at a claimed subgenus, it cannot be said that such a subgenus is necessarily described by a genus encompassing it and a species upon which it reads.” (emphasis added)). Each case must be decided on its own facts in terms of what is reasonably communicated to those skilled in the art. In *re Wilder*, 736 F.2d 1516, 1520, 222 USPQ 369, 372 (Fed. Cir. 1984).

40. With respect to changing numerical range limitations, the analysis must take into account which ranges one skilled in the art would consider inherently supported by the discussion in the original disclosure. In the decision in *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976), the ranges described in the original specification included a range of “25%- 60%” and specific examples of “36%” and “50%.” A corresponding

new claim limitation to “at least 35%” did not meet the description requirement because the phrase “at least” had no upper limit and caused the claim to read literally on embodiments outside the “25% to 60%” range, however a limitation to “between 35% and 60%” did meet the description requirement. See also *Purdue Pharma L.P. v. Faulding Inc.*, 230 F.3d 1320, 1328, 56 USPQ2d 1481, 1487 (Fed. Cir. 2000) (“[T]he specification does not clearly disclose to the skilled artisan that the inventors... considered the... ratio to be part of their invention.... There is therefore no force to Purdue’s argument that the written description requirement was satisfied because the disclosure revealed a broad invention from which the [later-filed] claims carved out a patentable portion”).

41. Regarding Applicant’s argument against Foster for the rejection of claim 1, the Examiner respectfully disagrees. Applicant states that Foster teaches making discs and does not disclose optical tape recording and that the media is thicker. Applicant also argues that the optical tracks in Foster are closed (spiral or concentric) and not continuous as would be the case for optical tape. Such arguments are irrelevant. First, the claim is directed to an apparatus claim. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In *re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board’s finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also *In re Swinehart*, 439 F.2d 210, 212-13, 169

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USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531

(CCPA 1959). “[A]pparatus claims cover what a device is, not what a device does.”

Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525,

1528 (Fed. Cir. 1990) (emphasis in original). A claim containing a “recitation with

respect to the manner in which a claimed apparatus is intended to be employed does

not differentiate the claimed apparatus from a prior art apparatus” if the prior art

apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2

USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) (The preamble of claim 1 recited that the

apparatus was “for mixing flowing developer material” and the body of the claim recited

“means for mixing ..., said mixing means being stationary and completely submerged in

the developer material”. The claim was rejected over a reference which taught all the

structural limitations of the claim for the intended use of mixing flowing developer.

However, the mixer was only partially submerged in the developer material. The Board

held that the amount of submersion is immaterial to the structure of the mixer and thus

the claim was properly rejected.) At present the claimed apparatus comprises the same

structure as the apparatus in Foster and, as seen in Figure 1, after passing through

roller 34 it is a linear optical data storage media. Additionally claim 1 does not state that

the pattern cannot be spiral or concentric it only states that it is a predetermined pattern

which encompasses any kind of pattern including spiral or concentric. Finally the claim

requires for the substrate to have a thickness from 4 microns to 275 microns and the

substrate in Foster is of 157 microns, which is within the claimed range, hence the

argument that the product is thicker than the product in the claimed invention makes no



sense since both the prior art and the claimed invention operate with substrates within a range of 4 microns to 275 microns.

42. Regarding claim 1 Applicant additionally argues that the process used is of thermal embossing that uses laser light to heat a substrate after lamination to deform the substrate for embossing and that there is no disclosure or suggestion of using a radiation source (e.g. producing UV or IR) to cure and harden a liquid layer. The Examiner respectfully disagrees. The claim requires that the apparatus comprise a radiation source, where radiation is defined as energy that is transmitted in the form of rays, waves or particles. There is no indication that the radiation source has to produce UV or IR rays, indicating that a laser is capable of being a radiation source. Regarding that Foster does not disclose or suggest that the radiation source to cure and harden a liquid layer Foster clearly shows in Figure 1 that the embossed substrate (item 24) being pulled away from the master roll (item 12) after being irradiated by the laser (item 36) which would require for the substrate to be harden in order to properly be separated from the master roll.

43. Finally, regarding claim 1 Applicant states that Foster does not teach or suggest a seamless drum because the master roller includes a resin layer having a resin plug between abutting ends. The Examiner agrees that Foster does not state explicitly that the drum is seamless, which is why the rejection is not under 35 USC 102 but under 35 USC 103. Foster is silent as to whether the seam created by the resin plug is maintained or removed, yet because the intention of the apparatus is to create an optical media with a pattern surface where the pattern is used to write information into

the media (column 4 lines 1 – 10) it would have been obvious for the seam to be removed since the presence of the seam would affect the pattern in the media which would affect the information that the media would carry.

44. Regarding claim 11 Applicant, in addition to the previous arguments for claim 1 Applicant states that the laser used by Foster is a very expensive and high powered gas laser which is different than applying radiation by using, for example, a heat lamp or UV lamp, as recited in Applicant's claim. The Examiner disagrees with this comment. As stated above Applicant only states that radiation is applied to the substrate where radiation is defined as energy that is transmitted in the form of rays, waves or particles. There is no indication that the radiation source has to produce UV or IR rays, indicating that a laser is capable of being a radiation source. Regarding the fact that Foster's apparatus is more expensive than Applicant's intended radiation source such argument is irrelevant since the cost of the unit is irrelevant to its functionality.

45. Regarding claim 11, Applicant argues that Norden fails to cure the deficiencies of Foster in regards to using a seamless drum. Norden is not used to teach using a seamless drum and, as explained above, such limitation would have been obvious since the seams in a drum would affect the pattern which would affect the product since the information contained in the media depends on the pattern embossed in the substrate as disclosed in Foster.

46. Regarding Applicant's argument that Norden teaches away from Foster because the high power laser in Foster would lead to dangerous results since it would instantly

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vaporize any residual solvent, badly distorting the polymer layer at best and possibly igniting the solvent (once raised above the ignition temperature) at worst. Such argument is unfounded since Foster is silent to the amount of energy used by the laser or the amount of time the substrate is exposed to the laser in order to state that such problems would occur if the chemicals used by Norden are applied in the method of Foster.

47. Regarding claim 8, Applicant argues that the art of Takakuwa fails to teach the limitation because the laser unit in Takakuwa is typically a multimillion-dollar machine that is massive and requires climate controlled class-100 environment and has a very extensive support infrastructure while Applicant's invention is a mechanical mass-reproduction machine/process to produce very inexpensive copies of complex and expensive patterns. Such argument is irrelevant since the cost of the unit is irrelevant to its functionality. Additionally Takakuwa is not used to meet the limitations of claim 1 but to meet the limitations exclusive to claim 8. The limitations of claim 1 are already met by Foster as explained above.

48. Regarding the objection to claims 1 and 11, due to Applicant's amendment the objection have been withdrawn.

***Conclusion***

49. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHEL RIVERA whose telephone number is (571) 270-7655. The examiner can normally be reached on Monday - Thursday 7:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katarzyna Wyrozebski can be reached on (571) 272-1127. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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